A Follower of the Cause

By

RILEY M. FLETCHER BERRY.

The swarthy little Italian proprietor of the fruit shop excitedly pointed to the headlines of one of the morning dailies and then almost pushed the paper into the hands of the sweet-faced, conventionally-gowned girl, who looked at the Italian with an amused smile from the cheap, wooden chair where she sat in the rear of the shop.

"But you would not wish all great men to die, Pedro? Surely not all kings and all Presidents?"

Pedro's sudden vigorous shrug of his shoulders and deprecatory wave of his hands shook his slight frame and, added to the previous effort of his excited harangue, made him cough violently. A look of vexation crossed his face as he caught his breath and said with an effort, "Yes, I would be glad to—keel them all—I—but Catalina there, she would weep," and he smiled sardonically.

Catalina had a small-boy customer at the front of the shop, but she had heard Pedro and as the boy went out with his oranges she turned and exclaimed, "Yes, Mees Clare, I ver' sorry have all keel, but Pedro—I laugh at him—he t'ink all king, all reetch man, bad."

"Mees Clare" laughed with Catalina and said, "You must watch Pedro or he will become one of these terrible Anarchists and then you and the children and I could have no more picnics for fear of knives and bombs."

Three dark-eyed little girls (one was already hanging to her father's coat-sleeve) came running into the shop from a back room as they heard the word "picnic," but Pedro cried hoarsely, "I shall weesh to be Anarcheest; that would be peekneek all time. Santa Maria! But eef I could get my helt!"

"But Pedro mio," broke in Catalina softly, "you weel be well soon again. You weel not be seek anny more."

"Mees Clare" had been good to Catalina and the children ever since she had accidentally stumbled across them on her way to the Newsboys' Home, in which she took such a vital interest, and she had become a frequent visitor at this little fruit shop in the farthest corner of the south end of the city. She was too well dressed to suit Pedro's rapidly-growing socialistic ideas, but when he found she "work for her bread ever' day," he frankly admitted to her in Catalina's presence, "I make meestake 'bout you; I tink you just reetch lady spend money at first time."

"No," she had replied, with the pretty smile which had immediately won Catalina, "I really work hard—to help my father. Just think, I write all morning long!"

This had furnished the only link lacking to bind their voluble Italian sympathies and friendship, especially in the case of Pedro. It was much to him that she was good to Catalina and the children, and—that she was clever enough to make her living by writing! He knew that those members of socialistic and anarchistic organizations—whither he was fast drifting—who were writers, were the most influential. Perhaps "Mees Clare" would write out for him some day, if Catalina would ask her, some of the ideas which were working in his mind and fermenting for lack of proper outlet. He had heretofore had only those who, like himself, were embittered by poverty and ill health, to talk to, and the seething poison was fast destroying what remained to him of happiness in life.

When, every few days, the quick-moving, graceful figure of "Mees Clare" stopped at the little fruit store to talk of the children with Catalina or bring or buy something, even little Corona could sometimes be enticed from her father—she was always near him—by Clare's smiling invitation. Pedro adored Corona far above everything and everyone except Catalina. The latter's blessed Virgin was nothing to Pedro, however, he tolerated her because the little ivory image of the Holy Mother seemed to comfort Catalina when anything wrong troubled them as a family, and he spoke respectfully of her, though in the next breath he might be swearing and ranting about the "down-trodden" classes.

This favorite theme of Pedro's amused the wholesome-minded American girl immensely, and Pedro's views and flaming figures of speech, which she never considered were to be taken seriously, were all faithfully repeated to her father.

"I am very much afraid, my daughter," the eminent politician had said in the beginning, "that you are sailing under false colors with these poor, benighted dagoes, and that if the truth were known as to the kind of a house you live in and the manner of man your father is, and that your working for your living is only being my private secretary, that Pedro would gladly cut our throats or send a dagger to our hearts some dark night."

"Why, daddy," she had exclaimed, with the suspicion of a twinkle in her eyes, "aren't you ashamed to malign both poor Pedro and me? You know we're not rich, and I'm sure no one works harder than your poor little daughter. How I've toiled over that speech of yours to-day!"

When the free kindergarten was opened in the neighborhood of the fruit store, in the fall, Clare persuaded Catalina and Pedro to send Cara, Catalina, jr., and Celestina (Pedro could not spare Corona), and she went with her "sunny Italian C's" herself that first morning. She met a certain amused-looking young man as she piloted Catalina and the little girls along the crowded sidewalks, and he told Clare's father of it the same day. Herbert Wick had known them always and he had now a confirmed habit of sauntering in to discuss "politics" every evening after dinner.

"She looked like a real 'Madonna of the slums,'" he was saying as Clare came in to fill her father's pet pipe.

"The slums, Herbert? You and dad put me out of all patience!" and she rather viciously poked the tobacco into the meerschaum. "Catalina does look like a Madonna, and Pedro and the children might all be 'great masters,' but 'slums' is most inapplicable. They are all so extraordinarily clean, as well as picturesque, that I fell in love with them at once and they liked me because my name begins with 'C,' too."

"I suppose they think you have no other name?" suggested Herbert. Clare had not chosen to enlighten them on a subject concerning which they had never questioned and probably had no curiosity—it had added an indefinable flavor to her acquaintance with the Crivellis — and she laughed as she replied: "Perhaps, but I'll break it to them the day I take dad to see them—oh, yes, you're going—for, in spite of my lack in names, they know I have a father I love as only little Corona loves Pedro. We'll go just as soon as that anti-socialistic speech is off your hands and mind, won't we, dad?" Her father chuckled a little and glanced at Herbert.

"Oh, you needn't laugh; you know you're horribly afraid of Pedro. He is such a dangerous 'Anarcheest!' Poor Pedro! His cough is getting worse."

The tiny Corona was taken ill the day after this conversation and in the three days before the child died Clare gave Catalina more comfort than either priest or doctor, but it seemed as if into the waxen little hands had been stiffened all that was left of Pedro's softer nature. His bitterness, intensified by his own increasing illness, grew daily until no one save Catalina, the children and "Mees Clare" was exempt from it. The other children could not take Corona's place and the days in which he had before been able to sit with Corona leaning against him quietly or prattling and playing near him from morning till night, seemed empty now. He would sit brooding for hours, and one day suddenly joined the secret brotherhood which lately had been more dangerous than ever. At his first meeting with them it was he who drew the red slip which was to give the chosen one undying honor and glory as the assassin of Judge Golden. Pedro had never seen him, but he reveled, even while racked by his cough, in the thought that he was to rid the world of the monster by whose efforts nearly all the Anarchists in the city had been arrested or forced to fly and the local circle all but broken up.

It was on Saturday that the brotherhood meeting took place and it had been decided that the judge should be shot the following Friday evening during the wild uproar of applause which would be sure to greet him as he rose to make his speech. Pedro did not expect to be able to escape; he knew the limits of his strength too well for that, but he would gladly die for the cause. He had not long to live at the most and Catalina—in a measure already prepared—would learn to thank her blessed Virgin that he had died for the great cause, honored as otherwise he, a poor, down-trodden fruit vendor, could never have hoped to be. He could not make his life or memory so dear to her in any other way and she would rejoice with him that—yes, whatever else death brought, he would surely be that much sooner with little Corona—some place.

On Thursday, in the gentle tones always addressed to his wife, lately weaker and unconsciously plaintive, he said, "I shall be going soon, Catalina mia." She caught her breath to choke back a torrent of tears. "Yes, I shall go soon—perhaps to-morrow. But," and his eyes flashed fire, "I go with honor, Carissima!"

"Yes, yes; you are always brave, Pedro mio," she said brokenly.

"I shall be strong to do what is only mine to do!" he added with pride and feverish excitement.

"Oh, Pedro, Pedro," she sobbed, throwing her arms about him. Did he suddenly feel so much worse or had he a premonition? He had surely seemed better lately.

"But what does it matter when?" went on the chosen of the brotherhood.

The street door opened and Catalina's face brightened through her tears as she saw Clare.

"What matter when?" repeated Pedro, and then he, too, saw Clare, and pressing Catalina's hand he said, "I may be going journey to-morrow, Mees Clare." The girl looked at him in surprise. The flush of excitement had suddenly left his face and he looked so white and weak—surely Catalina would not let him undertake anything foolhardy.

"I tell my wife jus' now I go soon. But you will take care of my Catalina," Clare knew now, but she would not make it harder for Catalina by letting her see that she did.

"Yes, Pedro, I will take care of Catalina and the children as long as you are away. But I am sorry you are going to-morrow. If you are well enough I wanted you to take Catalina to hear my father's speech on socialism. You are so interested in that and so is he, though in different ways. I am sure he would convert you Pedro."

"A spitch on soceealeesm," repeated Pedro mechanically.

"Yes," said Clare, "and I'm sorry that you can't go to hear and see my father. I am so proud of him, and I love him—I love him as Corona loved you, Pedro." She took a little parcel out of her bag and handed it to Catalina. "There is something in that for each of you. And now I must go," and she smiled brightly as she closed the door behind her.

The conversation had tired Pedro and he leaned back with closed eyes while Catalina untied the parcel. Inside were two smaller ones just alike, each wrapped in white tissue paper and tied with white ribbon. One of these Catalina opened.

"My baby!" she cried suddenly, and held something before Pedro's face. He opened his eyes and exclaimed, "Corona!" Catalina was talking incoherently of the blessed Virgin and "Mees Clare" and Corona, and it seemed indeed that Pedro's eyes beheld a miracle. The white parcel was transformed into a portrait of Corona, her dark hair and eyes, her delicately tinted complexion and little pink dress—all just as she had looked the last time Clare had taken the four "sunny C's" to the Park. She had a photograph taken of the children in a group, but it was not finished when Corona died and she had withheld it until there had been time to have painted from it two of Corona alone, to be given, first, to Catalina and Pedro. They did not think of the cost of such a gift, but to them its value was priceless. It was their little Corona come back. Catalina's was placed near the image of the Virgin, but Pedro held his in his hand all day and slept with it under his pillow that night. It seemed to soothe him; the bitterness of his face was gone, and all the second day he sat silent, still holding the portrait. Catalina did not disturb him. Perhaps he was better. The blessed Virgin might have put healing power into the picture. He seemed stronger.

He roused himself at supper time and noticed Catalina's look of pleasure when he ate the dates and drank the wine she gave him—more than he had taken at one time for weeks before. He stroked Catalina's beautiful hair and then kissed her and the children. "I think I go to the meeting, Carissima," he said. He had been so utterly absorbed in the portrait that she thought he had forgotten all other external matters, but it pleased Catalina that he felt well enough to go, and it would please "Mees Clare."

Some one must stay with the children, and it would help him that she trusted his strength to go alone, and yet she was anxious as she saw him get on the car. She had no thought that there might be a socialistic meeting beside the one "Mees Clare" had mentioned, though she had not said where it would be held, and Pedro had no thought but that in so large a city there might be two or three different ones. He cared now only to acquit himself successfully of his mission, and he felt exalted as he remembered how beautiful Catalina had looked as he left her (how proud she would be of him) and felt the portrait of Corona lying against his heart.

The crowd was already great when Pedro arrived; he was tired from the unusual exertion and leaned against one of the massive granite pillars near a closed side entrance, waiting until the number at the front should have dwindled and his chance of being pushed and jostled less. He needed all his strength. Some one near him said, "There comes Judge Golden now," and Pedro turned with the rest of the group to look at the orator of the evening. Right before him, her face turned away, for she was saying something to a tall, elderly, gray-haired man, whose eyes were as kindly as his features and bearing were distinguished, stood "Mees Clare." (With them was Herbert Wick.) "Mees Clare" at this meeting? Then some one jarred his left arm and he forgot everything save that he must thank her for the last beautiful thing she had done in giving him and Catalina the picture. But what was she saying?

"I think I saw Pedro here just a moment ago as we left the carriage. Wait just a minute—we have plenty of time—till we find him and get him a seat on the platform. He'll be smothered in the crowd below. I wonder if Catalina came, too."

Pedro's hand instinctively sought Corona's portrait and clutching it as Clare turned and held out her hand to him, smilingly saying, "Why, here you are, Pedro! How nice. Daddy, this is Catalina's husband, Pedro, you know—and this is my father, Judge Golden, Pedro. And Mr. Wick." But he did not hear the last name. There was a rushing sound in his head, and his heart and lungs seemed to be working against time and each other. "Judge Golden! Mees Clare's father! Her father, and of another name!"

"You deed not tell—me," he began, gasping. The girl, misunderstanding, interrupted: "No, I did not tell you the name of the hall or anything because I was distressed for Catalina when you said you were going away."

"Follow us," said the judge, "and you'll avoid the crowd at the front. We'll find you a seat."

Pedro's face was ashen and he tottered as he tried to keep up with them. "The Cause! The Cause! Now is the time," something urged, which seemed within and yet without him, but his heart beat hard against the portrait and he answered: "I must thank her first." He pressed his hand against the picture.

"You are ill, Pedro!" exclaimed Clare, as she happened to turn in the glare of the light and saw his action and his livid face.

"But, no!" He said it almost fiercely. "I weesh to t'ank you for Catalina—and—me—for the peecture." He looked so haggard and ill. Clare's heart ached for them all. Why had Catalina let him come?

"I am glad you liked it," she said simply. "I thought you would—I knew you would," she added, "for my father and I love each other as much as you and Corona did." Then she turned to Herbert Wick: "Herbert, stop here a moment with Pedro; it is so close and hot and he has come a long way." Pedro sank into one of a row of chairs which stood in the corridor. Well, that was over; he had thanked her and finished his duty to her and to Catalina, and now—the Cause! the Cause! He felt for his pistol. Herbert Wick brought him a glass of water; it refreshed him, and now—. The young man was telling him that they would better be finding their seats; the judge would begin speaking in a few minutes.

Pedro had sunk so violently into the chair that the portrait had been pushed up in his pocket and the clasp loosened. As he moved now it fell to the floor and the case opened. He picked it up and the baby lips seemed to be speaking, saying again, "C'rona loves 'oo." He heard "Mess Clara's" voice, too, and it said, "My father and I love each other as much as you and Corona did, Pedro." She had tried to save Corona for them and he—he was going to—Ah, no, not that he; it was the Cause, worthy of any sacrifice, and he was pledged—yes, and for Catalina. It was all there was left that he could do for her. But Catalina did not know—she would not understand—he, Corona's father, to kill "Mees Clara's" father! To Catalina no country and no Cause would excuse that. No! No! No! She would hate his memory! His Catalina! But the Cause! They were at the doorway next the platform now. To fail the Cause meant dishonor and death at the hands of the brotherhood! Dishonor!

There was the muffled report of a pistol discharged in a dense crowd; the piercing, horror-stricken cry of a woman. The crowd surged toward the point where Judge Golden and his party had stood but a moment before. Some one shouted "anarchy! Guard the doors!" Then there was a parting of the crowd and the open space showed a dark form, the head half raised, supported by Herbert Wick, and Miss Golden's drawn, white face bending over to catch the last whispered words.

"I tank—you—Mees Clare— I no keel—your—fader—I—keeled—myself. You kip—your promeese—Catalina—my little ones—Corona!"

RARE COINS SOLD BY AUCTION.

Collection of 133 American Copper Cents Sold for Two Hundred Dollars.

Boston Transcript.

At the continued sale of the Haigh collection of coins, at Libbie's, the principal item was a collection of United States copper cents, representing the dates from 1793 to 1857, inclusive, and containing 133 specimens, all different. The bidding on this lot started at $5, and then jumped to $25. Somebody else bid $50, and the next bid was $100. Then the bidding went along, by $5 and $10 bids, until $185 was reached, when Mr. Collins, a Boston collector, bid $200, and the set was knocked down to him. It is an extremely fine collection, and, judging from the prices obtained for some of the 1-cent pieces which were sold singly, it could not be duplicated at that price. The 1793 cent, for instance, sold for $8. The half-cents brought even higher prices, proofs of 1840 and 1848 going for $20 each, and a proof of 1849 selling for $24.

There was active competition for some of the gold pieces offered, an uncirculated $3 gold piece of 1875 going to a Philadelphia dealer for $155. The same dealer bought a gold dollar, uncirculated, for $36.75, and a collector purchased a gold dollar of 1875 for $50. An octagonal $50 gold piece, minted at San Francisco in 1852, went to a New York dealer for $96. The "Miner's Bank" $10 gold piece went for $48, and the Mormon $5 piece of 1849 for $15.50.

Foreign coins were the feature of to-day's sale, but there was less competition for these than for the pieces of our own coinage. One of the features of the sale was the disposal of some of the foreign gold coins at less than their face value. A gold quadruple of Ferdinand VII of Spain, having a gold value of $16.05, went for $15, and another Ferdinand VI, 1754, with a gold value of $16.14, brought only $14.75. A British five-sovereign piece of 1887, gold value $24.32, was sold for $23.50. Two United States patterns, $5 and $10, in gold, were sold for $88, and another of the gold $4 piece, 1879, went for $41. A series of medals of the war of 1812 brought their mint value, $62, and a collection of Chinese coins and temple medals, some of very early times, in all 740 pieces, in a case, went to a collector for $56. This afternoon a collection of American, colonial and State coins and State bank bills will be sold.

A Writer's Experience.

Edwin L. Sabin, in Lippincott's Magazine.

How did I happen to take to writing? I don't believe that I just know. When I was little my desire was to be either a bishop or a brakeman. Literary life has been the strenuous life. Eight years in daily newspaper work, Des Moines, Ia., Peoria, Ill., and elsewhere; first story was written in 1894; sold in 1898. Labored over it and labored with it. Was written, or outlined, in lead pencil, then copied in full in pencil, again copied on typewriter, and once more copied and polished on typewriter. It was 10,000 words long, all about a buried treasure and shipwreck on Dry Tortugas. My father went to sleep while I was reading it aloud, and woke up to say that it was very good. My mother, who had listened, concurred. I kept sending it out, rewriting it, and sending it out, until finally it was about 4,000 words, and, indeed, not at all bad. In four years I sold it, suddenly. Great excitement! At the time I was on two newspapers, morning and evening edition, and working only from 10 in the morning until midnight or after, usually after. In leisure hours I was pursuing writing. Well, the story sold. High-class magazine. Check on publication. Publication came and went. No check. May passed. June passed. July passed. August ditto. No check. Magazine failed in September—and no check. No check yet. That pet story, my constant companion for four years, and a box of candy mother was bringing me from Chicago, but lost on her way from the depot to the house, are my bitterest memories.

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FAIRY TALES OF SCIENCE

II.

The Invisible Universe

By SIR ROBERT BALL, LL. D., F. R. S.

On any clear night some few thousand stars will be visible to the eye without any further optical aid. With the assistance of a small telescope an enormous increase in the number of the stars will be at once perceptible, and with every increase in the power of the telescope the number of apparent stars in the heavens waxes greater and greater. No one has ever attempted to enumerate the precise number of stars that might be counted in a celestial survey made with great telescopes under suitable conditions. Estimates have, however, been formed, based on careful counting, of the number of stars to be seen in small selected areas, and it has thus been possible to obtain some notion of the total number of stars that lie within the range of our great instruments. As may naturally be expected, the estimates vary a good deal, but the lowest would not be much less than a hundred millions. There are other estimates which place the number of visible stars at two hundred millions, or at numbers even higher still.

THE PROOF OF THE INVISIBLE.

As every increase in the power of the telescope brings more and more stars into view, and as the number of new stars increases in a ratio even more rapid than that of the increase of the power of the telescope, it seems quite certain that there must be stars which lie beyond our reach. The star which looks small even in a large telescope may become a comparatively bright star in a telescope greater still. Through the greatest instrument millions of minute points may be discovered, each of which would doubtless be presented as a bright star if the powers of observing should ever receive any great enhancement. From considerations of this kind we infer that there must be innumerable stars which up to the present have been quite unperceived. If we further bear in mind that the region of space submitted to the examination of our telescopes can be no more than an inconsiderable point in comparison to the extent of infinite space, it is obvious that the unseen stars must be enormously greater, probably untold millions of times more numerous than the stars which come within our ken.

But there is another line of thought which will also conduct us to the conclusion that the universe we see must be as nothing in comparison to the universe as it actually exists, but of which by far the greater part is totally invisible. We must remember that what we call a star is perceptible only because it is a self-luminous object. It is a body heated to a temperature sufficiently high to cause it to glow with vivid incandescence. The star is indeed a sun, and in many cases those suns, which we call the stars, are quite as large and quite as lustrous as the sun that shines in our own skies. The star is, however, a million times as distant from us as the sun, and this circumstance makes all the difference in the apparent brightness of the two bodies. If a celestial body situated at a stellar distance is to be visible, it is essential for that body to be bright enough to possess a sun-like glow. A body like our own globe which has no light of its own, or like the moon, or like the planet Jupiter, if placed at the same distance from us as one of the ordinary stars, would be totally invisible to dwellers on the earth. It could never under such circumstances shine by mere reflected light. The sunlight or the starlight that might fall upon it would be wholly insufficient to give the surface of the body a luminosity which would render it visible from such distances as those from which we view it. Hence we are led to the remark that the objects we see in the heavens can be no more than the exceptionally bright points of the universe. We must necessarily remain in ignorance of the parts which are not so bright. Nor can we doubt there are such parts. If we should fancy that the sublime spectacle of the starry heavens offers us any adequate view of the universe, it would be certain that we had fallen into a tremendous error.

HOW THIS MAY BE ILLUSTRATED.

Let us imagine some being who came from some other world with the object of viewing this earth. Let us suppose that he arrived in the neighborhood of the earth at midnight, and, while still far aloft, were to look down on London, how little would he see of the mighty city sleeping beneath him! He would no doubt be able to perceive many of the lights by which the city is illumined, he might notice, perhaps, by the arrangements of the lights that among the forests of houses some special features distinguished the areas of the parks or the breadth of the river. Careful observations of the arrangement of lights in lines or rows might here and there point out to him the directions of the more important thoroughfares—he might see lights from a banqueting hall, or he might notice the gleam from a chamber where a tender watch was kept at the bedside of the sick. The innumerable lights of London he might indeed discover, but of the city itself he could see nothing. The great buildings and monuments, the wondrous life and activity that make up the great city would be wholly shrouded in the darkness; he would see nothing of them. Now, suppose this observer could obtain no further knowledge of London than this distant midnight glimpse, would not his conception of the city be ludicrously inadequate and incomplete? He would indeed have seen the lights, but of what the lights illumine he would have seen nothing. In like manner, when we look up at the heavens the only view of the universe which is vouchsafed in truth to us is as ineffectual as that midnight view of London which I have just described. We see the lights of the universe, but those greatly more numerous objects which are not themselves luminous are completely hidden from our view.

Our knowledge of the universe becomes enormously augmented according as we acquire the means of learning the existence of those objects which are not luminous for us to see. To be self-luminous means in general to be hot, and for an object to be hot is, from the nature of the case, a temporary condition. It may remain hot, like the sun, for untold myriads of years, but even in this case such a condition cannot be of infinite duration. The sun has not always been hot; the sun will not ever remain hot. If a celestial globe be so hot as to be capable of light and heat, we must conclude that it has been in some way subjected to exceptional conditions the effect of which has not yet passed away. And for each body that is glowing under exceptional circumstances, there are doubtless a vastly greater number of bodies which are not at the moment hot enough to glow into visibility. If we will but look at the probabilities of the case, it seems obvious that those objects which are not at present in that highly heated condition which would enable them to radiate light, must be hundreds of thousands or millions of times more numerous than those bodies which happen to possess a sunlike temperature. The inevitable inference is, that, inasmuch as we can see only the intensely heated bodies, we probably see only a very minute fraction, probably much less than a millionth part, of the actual universe. In this statement it will be noticed that we are referring to those objects alone which, had they been in a sun-like condition, are quite near enough to have been within the reach of our telescopes.

THE MAGIC OF THE PHOTOGRAPHIC PLATE.

But we are not left merely to surmise in our knowledge of the invisible contents of the heavens. There are, of course, certain differences between the perceptive powers of different eyes. Some persons will see easily what others can only see with difficulty, or cannot see at all. But from the astronomical point of view the photographic plate has a perception of faint objects far transcending in delicacy the power of perception of any visual organ. Among the discoveries which photography has enabled us to make in the heavens, the most startling, I think, are those in which the photographic plate discloses objects whose luminosity is so feeble that we have never been able to see them. I do not mean merely objects which are too faint to be seen by the unaided eye; I mean objects which are too faint to be seen even with the most powerful telescope.

Let me give an illustration. I take for this purpose the case of that beautiful group of stars which are known to us as the Pleiades. From the earliest ages this exquisite cluster has attracted the attention of those who love to study the heavens. Ever since the days of telescopic astronomy commenced the group in the Pleiades has been examined night after night by the most skillful and painstaking observers. But it is no disrespect to the vigilance and skill of all these telescopic astronomers to say that there was a most important feature in the Pleiades which entirely escaped their notice. When a highly sensitive photographic plate, suitably arranged in a telescope, was directed to the cluster, and when that plate received an exposure of an hour or two, all extraneous light being carefully excluded, then a remarkable discovery was made. The numerous bright stars in the Pleiades were of course seen on the photograph just as they are seen with the eye at the telescope. But besides showing these objects which were within the reach of the astronomer's view the photographic plate also revealed certain features beyond the power of any eye. It showed unmistakably that the cluster of stellar points forming the Pleiades were enveloped with a wondrous fire cloud, or nebula, as astronomers generally term it. At first when this nebula as a sort of haziness appeared on the plates it was natural to conclude that it must have arisen from some accidental defect in the plate or from some irregularity in the development or from some stray light that had found admission. Some explanation of this kind would certainly seem to receive confirmation when on further careful scrutiny of the Pleiades the most experienced astronomer, using even the most powerful telescope, totally failed to see any trace of the astonishing nebula. But when photograph after photograph was taken of the same object, when the plates were varied, when reflecting telescopes as well as reflectors were used in taking the pictures, and when the same result appeared every time it was no longer possible to doubt its existence. The mighty nebula in the plelades has now to be reckoned as a well-established feature in the heavens, even although no one has ever seen it. It belongs emphatically to the invisible universe.

THE STRANGE STORY OF ALGOL.

In some ways also we have been able to confirm by direct evidence the existence of dark but mighty stars, though, as I have already pointed out, it seems to be impossible from the nature of the case ever to bring them within the range of actual vision. But though the dark star is not to be seen, yet its presence can be indirectly manifested in certain cases. The necessary conditions under which alone it is possible to do this are extremely rare, a fact which perhaps makes such cases all the more interesting whenever they do occur. I now refer particularly to the far-famed star named Algol which lies in the constellation of Perseus. It has been known for centuries that Algol changes its brightness in a somewhat mysterious manner. Under ordinary circumstances, it can be seen nightly as a star of the second magnitude. But presently it undergoes a remarkable change. After two or three days of apparent constancy its light begins to decline. From being a star of the second magnitude, Algol declines until it becomes a star of no more than the fourth magnitude. Three or four hours are occupied in this transformation. When the brightness has sunk to the lowest point the star's apparent magnitude remains fixed for twenty minutes, after which it again begins to brighten up so that in a little more than three hours, that is to say, about seven hours after the cycle of change has commenced, Algol is found restored to its original magnitude. At this brightness it remains for another two or three days, when the same cycle of changes again recurs.

It has been one of the triumphs of modern discovery to have provided an explanation of the phenomena of Algol. It now appears that the bright star is a sunlike body, and that around this sunlike body a dark star revolves. It so happens that the plane in which this dark star moves comes very close to the observer's eye, and hence, in the course of each revolution, the dark object comes between the eye and Algol and intercepts a portion of its light. Even under these circumstances we cannot be strictly said to see the dark star. All we do see is the diminution in light of the bright star which has been produced by the interposition of the dark one. There are other circumstances which show that in the case of Algol we have demonstrative evidence of the existence of a body totally dark, yet comparable in magnitude and weight with our own sun. It should also be remembered by what a fortunate chance we have been able to learn the existence of the dark body. This invisible star might have been very close to Algol. It might have been revolving around Algol. All this might have happened without our ever having dreamed of its existence. For us to discover this dark star it was further necessary that the plane in which it moves should pass through the eye of the observer. The fact that a body is found to fulfill these conditions suggests that there are in all probability a very much larger number of bodies which do not fulfill them and consequently remain invisible. Thus Algol provides another illustration of the astonishing proposition that the visible stars and other objects in the heavens, innumerable though they doubtless are, must nevertheless be immensely transcended in number and mass by those objects which form the invisible universe.

—Next Week—

"Curious Means of I dentification " by Dr. McPherson.

Don't Talk Hard Times.

Success.

I never knew a man to be successful who was always talking about business being bad. Never allow yourself to dwell on the dark side of anything. You should refuse to talk about depressed markets or hard times. Learn to talk up, not down. Many business men become chronic grumblers and fault-finders. Times are always hard with them. Other men get into a pessimistic rut, and never see brightness or success in anything. It is impossible for such people to prosper. Success is a delicate plant, and requires encouragement and sunshine.

Regard yourself as superior to the evils which surround you. Learn to dominate your environment, to rise above depressing influences. Look for the bright side of things, not the dark and gloomy side.

The world likes sunny, hopeful, buoyant characters; it shuns lugubrious prophets, who see only failure and disaster everywhere. The hopeful, cheerful men and women, who see success and longevity in their callings, are the ones who are sought after. It is as natural to try to avoid disagreeable, unpleasant people, as it is to try to escape from the clouds and shadows into the sunlight.

ABOUT GENERAL DIX.

Correction of an Error in a Current Magazine.

Boston Transcript.

Even experts err, which is a comforting reflection for everyday mortals. Gen. Francis V. Greene is unquestionably a military expert, being a very accomplished officer and an interesting writer and trained observer, but even he when writing the history of the army makes in the current Scribner a slip when he enumerates John A. Dix as one of the generals Lincoln appointed who were "without military training." Dix is put in the same category with Banks and Butler. Now General Dix did have a very valuable military training. He served throughout the war of 1812 as an officer of the regular army. In those days officers began their career early. General Dix was an ensign when he was only fifteen years old and saw a good deal of hard service on the northern border. He was lieutenant and adjutant when but sixteen. He remained in the army after the close of the war, serving on the staff of General Brown, and resigned in 1828, when he was a captain of artillery. He was regarded as a very promising officer and of so much discretion that while in the army he was sent abroad as a special messenger in relation to a diplomatic mission of considerable delicacy. In all he served sixteen years in the regular army, and for his age when he resigned and the methods of that day he was "trained." Oddly enough for a man who lived to be eighty-one and who was elected Governor of New York when he was more than three score and ten the motive for his resignation from the army was continued ill health and the apparent necessity of guarding a constitution which was regarded as delicate. Change of occupation may have been the tonic required. If it was it was marvelously effective, for few men ever worked harder or more worthily than John A. Dix.